

REMARKS/ARGUMENTS

Claims 1, 2, 4-9, 11-16 and 18-21 are pending. By this Amendment, Claims 1, 2, 6, 11 and 21 are amended and Claim 10 is cancelled. Claim 21 has been amended to correct an obvious error. Claims 3 and 17 were previously cancelled. Applicant gratefully acknowledges the Examiner's indication that Claim 21 is allowed and that Claims 16 and 20 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 1 has been amended to clearly define over the cited references. Amended Claim 1 recites a device to compress combustion air for a combustion engine of a motor vehicle, with a housing (12), with at least one compressor impeller (30) arranged in a compression area (28) of a first housing part (14), which is arranged in the flow direction between an air inlet (24) and an air outlet (43) of the housing (12), as well as with an electric motor (18) arranged in a second housing part (16) of the housing (12) to operate the compressor impeller (30), wherein a spiral-shaped flow channel (42) running in the circumferential direction of the first housing part (12) and connecting the compression area (28) with the air outlet (43) surrounds the electric motor (18) at least partially in the axial direction, wherein the flow channel (42) is at least partially defined by the second housing part (16) and has a cross-section that widens in the circumferential direction of the housing (12), so that air flows circumferentially from the compression area (28) to the air outlet (43). The device is characterized in that electronic components (54) of the motor electronics of the driving electric motor (18) are mounted on the second housing part (16) such that the second housing part conducts heat from the electronic components to the flow channel so that the electronic components are cooled predominantly via the flow channel (42).

Among other things, the subject matter of Claim 10 has been added to Claim 1. Claim 10 was rejected under 35 U.S.C. 102(b) as anticipated by Woollenweber et al. (Patent No. 6,129,524), or, in the alternative, under 35 U.S.C 103(a) as obvious over Woollenweber et al. in view of Prevond et al. (FR 2 815 671 A1).

Applicant agrees with the Examiner that Woollenweber fails to disclose a cross-section of the flow channel widening in the circumferential direction of the housing.

Woollenweber et al. also fails to teach a spiral-shaped flow channel (42) having a cross-section that widens in the circumferential direction of the housing (12), so that air flows circumferentially

from the compression area (28) to the air outlet (43). Rather, Woollenweber et al. teaches a motor-driven centrifugal air compressor with axial airflow. Air entering compressor inlet 40 is radially forced by the rapidly spinning compressor wheel 16 to the periphery of compressor wheel 16, and into outwardly extending passageway 31, to be directed thereafter by the second external housing portion 34 in a generally radially inward direction through a plurality of curved straightening vanes 38. The straightening vanes 38 alter the flow of compressed air from a generally tangential flow to a generally axial flow (Col. 5, lines 38-44). Additionally, Woollenweber et al. teaches compressed air exiting the motor-driven compressor 10 at compressor outlet 42 (Col. 5, Lines 54-55). Therefore, Woollenweber teaches that air flows generally axially, not circumferentially, from the compression area to the air outlet.

Original Claim 10 specified that the flow channel (42) features a cross-section that widens in the circumferential direction of the housing (12). With respect to original Claim 10, the Examiner stated that “It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a cross-section of the flow channel widening in the circumferential direction of the housing...as taught by Prevond, to improve the efficiency of the Woollenweber device, since the use thereof would have controlled the compressed air into the housing of the turbocharger and protected the mechanical degradations caused by the excess of the engine temperature.”

Applicant respectfully disagrees with the Examiner that it would have been obvious to combine Woollenweber et al. and Prevond et al. to obtain the present invention. Woollenweber et al. teaches away from the construction of Prevond et al. Figure 1 of Woollenweber et al., identified as “Prior Art,” illustrates a cross-section that widens in the circumferential direction, similar to that depicted by Prevond et al. Woollenweber et al. deliberately taught away from a cross-section of the flow channel widening in the circumferential direction of the housing. Woollenweber et al. discloses that because structures like that illustrated in Figure 1 of Woollenweber et al. have compressor motor losses concentrated in, and that must be dissipated from, the smaller compressor housing, the compressor motor becomes more temperature sensitive. By “temperature sensitive,” Woollenweber et al. means a motor or electrical component whose reliability may be at risk, or whose performance may be degraded by the inability to dissipate heat generated during its operation (Col. 1, Lines 58-64). Therefore, the efficiency of the Woollenweber et al. device is not improved by utilizing a cross-section of the flow channel widening in the circumferential direction of the housing and the use of such a flow channel would not have protected the mechanical degradations caused by the excess of

Appl. No. 10/529,831
Reply to Office action mailed August 16, 2007

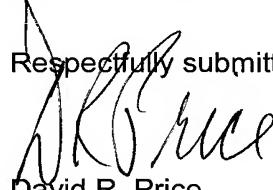
the engine temperature, as taught by Prevond et al. Accordingly, Woollenweber et al. teaches a compressor having radial and axial compressed air passageways that do not have a cross-section that widens in the circumferential direction.

Accordingly, it would not have been obvious to combine Woollenweber et al. with Prevond et al. to teach the invention recited in original Claim 10 and in amended Claim 1. The cited prior art does not teach or suggest the subject matter of amended Claim 1.

Claims 2, 4-9, 11-16 and 18-20 depend (directly or indirectly) from Claim 1 and are therefore allowable. The dependent claims also include additional patentable subject matter.

In view of the foregoing, entry of the above amendments and allowance of Claims 1, 2, 4-9, 11-16 and 18-20, in addition to the previous allowance of Claim 21, are respectfully requested.

Respectfully submitted,



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Docket No.: 022862-1057-00
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